Vol. 6 No. 2, 2025, pp. 103-112 **Jurnal Pepadun**

Evaluation of Design E-Ticketing Website for Mount Kerinci Using the User Experience Questionnaire

[*1]Iqbal Revianda, [2]Jefri Marzal, [3]Mutia Fadhila Putri, and [4]Muktashim Billah

[1,2,3,4]Department of Information Systems, Faculty of Science and Technology, Universitas Jambi, Jambi, Indonesia
e-mail:[*1]**iqbalrevianda25@gmail.com**, [2]jefri.marzal@unja.ac.id, [3]mutia.fadhila@unja.ac.id, [4]muktashim.alfatih@gmail.com

Abstract *- This study aims to evaluate the user experience of an e-ticketing Mount Kerinci website design for digital services in the nature tourism domain. E-ticketing Mount Kerinci website has services such as features for online ticket purchases, virtual tours of the mountain climbing routes, and online payment for climbers. The features are designed as a digital solution to the current issues with manual ticketing systems. Using the mixed method approach, respondents were gathered to conduct system trials using task scenarios and evaluate user experience using a user experience questionnaire (UEQ). The UEQ evaluation showed an excellent UX (User Experience) level, following existing benchmarks. In detail, although the UEQ evaluation showed excellent results, especially in pragmatic qualities (Clarity, Efficiency, Reliability), and the hedonic quality of Novelty was also still in the 'Excellent' category, qualitative data revealed several concrete areas that need improvement. These results will be the main reference in the improvement design process.*

Keywords**:** *E-ticketing; User Experience; User Experience Questionnaire; Mount Kerinci; Tourism.*

1. INTRODUCTION

As a premier destination for nature tourism in Indonesia and one of its highest peaks, Mount Kerinci attracts a significant number of climbers annually [1]. However, the existing ticket booking system relies on an inefficient manual process, leading to long queues, a frustrating visitor experience, and data integrity issues that hinder effective park management. To address these challenges, digital transformation through online platforms is essential, as modern tourists increasingly depend on them for information and booking [2]. In response, an e-ticketing website prototype has been developed for the Kerinci Seblat National Park Authority (BBTNKS) to streamline the booking process for both management and climbers.

The E-Ticketing Mount Kerinci website is an online platform that serves as a digital solution to the current issues with manual ticketing systems. This system offers several features such as online ticket purchases from anywhere and anytime, checking climbing quotas, virtual tours of the mountain climbing routes, and viewing the Standard Operating Procedures (SOP) for climbing Mount Kerinci. This website will be directly managed by the Balai Besar Taman Nasional Kerinci Seblat. Currently, the website has reached the prototype stage, and before it is fully used by the general public, an evaluation will be conducted to determine whether the designed interface is acceptable to users. Evaluation is one of the elements in the management system that includes the stages of planning, organizing, implementation, monitoring, and assessment [3].

In developing information systems solutions for organizational problems or opportunities, offering good usability is no longer sufficient to be successful. We must pay attention to interaction qualities to be better at giving solutions [4]. User experience (UX) refers to a user-centered approach, which strives to create products or systems that meet the user's needs[5]. Refers to ISO 9241-210: 2019**,** UX is defined as a person's perceptions and responses arising from the use, or anticipated use, of a product, system, or service [6]. Based on this, the success of a digital service is critically dependent on its UX, which encapsulates a user's overall perceptions and feelings when interacting with the system, and it is a factor that makes users want to use the system continuously [7]. A poor UX, characterized by confusing interfaces or difficult processes, often leads to high abandonment rates [8]. Conversely, a positive UX can significantly increase system adoption and user satisfaction [9]. Therefore, before public deployment, a thorough evaluation of the prototype's UX is imperative to ensure it meets user needs and expectations.

© 2025 The Authors | doi: 10.23960/pepadun.v6i3.274

The User Experience Questionnaire (UEQ) is a widely validated method for quantitatively assessing UX across six dimensions: Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty [10], [11], [12]. A questionnaire is a data collection technique conducted by presenting a number of questions or written statements to respondents [13]. This method is also known for not requiring too much effort in its execution, as it only takes 3-5 minutes for respondents to read the instructions and fill out the questionnaire [14].

Previous research has consistently demonstrated its utility. For instance, studies have used UEQ to identify specific UX weaknesses that lead to poor system acceptance [15] and to validate the effectiveness of design improvements in subsequent iterations [16]. However, while the UEQ's utility is well-established, a research gap exists regarding the UX evaluation of e-ticketing systems designed specifically for high-demand nature conservation areas within the Indonesian context. This study aims to fill that gap by conducting a comprehensive UX evaluation of the Mount Kerinci e-ticketing website prototype. Using the UEQ method, this research will assess the system's current UX baseline from the perspective of potential users. The objective is to identify its strengths and weaknesses across all six UX dimensions and to provide data-driven recommendations for future design improvements. The findings will offer valuable insights for the BBTNKS and provide a benchmark for similar digital transformation projects in other national parks.

2. RESEARCH METHODOLOGY

2.1. Research Design

This study employs a mixed-methods approach, combining both quantitative and qualitative data analysis as defined by Creswell [17] and following the research stage by Kushendriawan [12]. Our study used a quantitative approach to analyze numerical data collected using a User Experience Questionnaire (UEQ) on the E-ticketing system. The UEQ is a validated evaluation method designed for end-users to provide a quick, comprehensive assessment of their perceptions and overall experience with a product [15], [18], [19], [20], [21]. Simultaneously, the qualitative approach is conducted by gathering input and suggestions from respondents to strengthen the quantitative results and serve as a basis for designing improvement recommendations. Qualitative research is a method aimed at understanding and deeply describing the behavior, experiences, and perspectives of individuals or groups in a specific context, with data presented in narrative or descriptive form [22]. This study used a questionnaire to provide a list of written questions to individuals or groups of respondents to obtain the answers, responses, or information the researcher needed [23].

2.2. Determining Respondents

The process of determining respondents in this study was conducted using the purposive sampling method, which is a sampling technique that uses the researcher's judgment or assessment in selecting subjects or units deemed most relevant to the research objectives [20], [24]. The main criteria for respondents include: productive age (15–65 years) to ensure representation of age groups that are generally active in mountain climbing, as well as having interest or experience in climbing Mount Kerinci. In addition, respondents must be able to access and navigate the website prototype through digital devices (computer/laptop/smartphone). From this method, the number of respondents involved was 37 people, exceeding the minimum number recommended by the UEQ method (at least 20-30 respondents) to ensure stable results [25].

2.3. Data Collection Process

After recruiting respondents, data collection began by allowing them to explore the e-ticketing website after explaining the prototype system to be tested. Respondents were given four scenario tasks to evaluate their perceptions and responses using the Mount Kerinci Climbing E-Ticket Website. Each task was designed to test a key aspect of the application. Figures 1 and 2 display several system interfaces that will be tested by the respondents.

Vol. 6 No. 2, 2025, pp. 103-112 **Jurnal Pepadun**
 | doi: 10.23960/pepadun.v6i3.274

During this period, respondents were asked to understand the navigation and main features such as the registration process, selection of climbing schedules, payment, and ticket confirmation. After the exploration, respondents filled out the User Experience Questionnaire (UEQ) via Google Form, which contained 26 statements with a rating scale from 1 (Strongly Disagree) to 7 (Strongly Agree). The questionnaire includes six dimensions of user experience: Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty [19]. After that, respondents are also asked to provide additional suggestions and feedback through open-ended questions as a basis for design improvement recommendations.

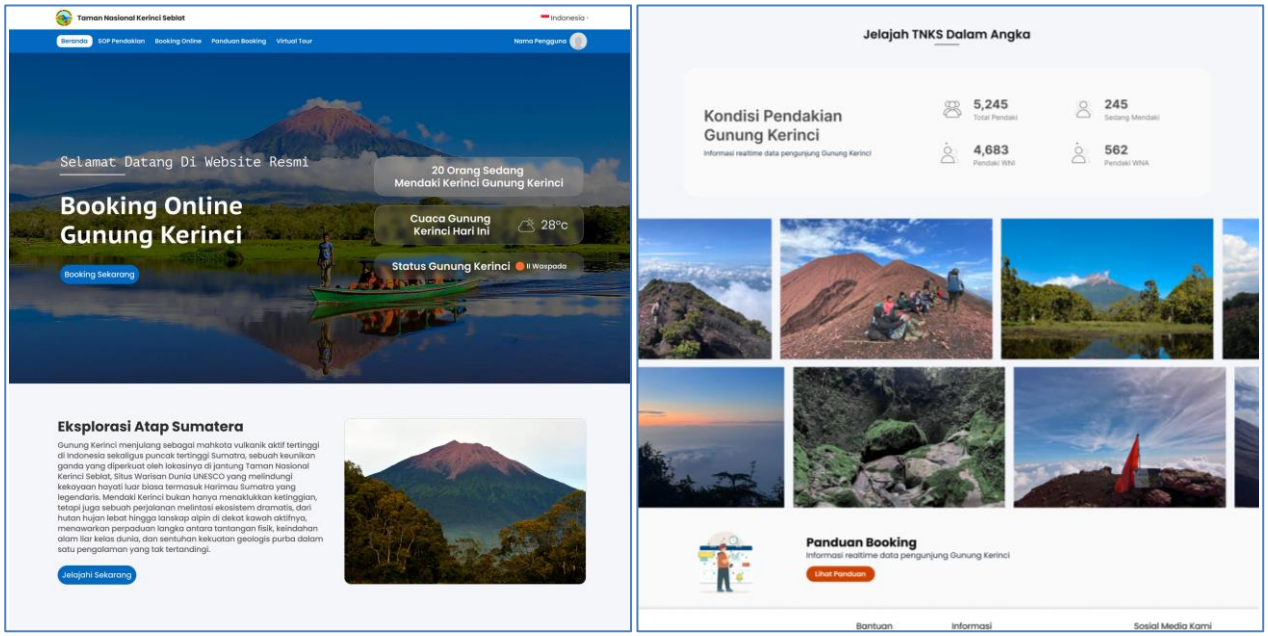

Figure 1. User interface of home page e-ticketing systems.

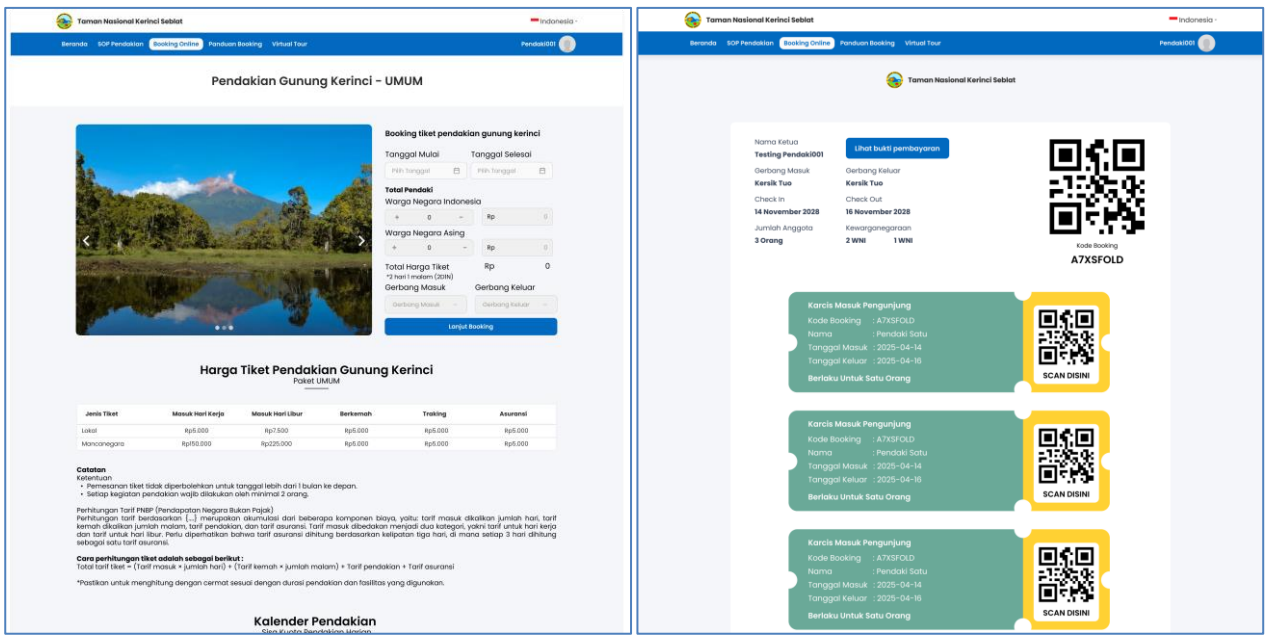

Figure 2. User interface ticket booking process for hiking at Mount Kerinci.

 | doi: 10.23960/pepadun.v6i3.274

In this study, the quantitative data analysis from the UEQ questionnaire was conducted with the help of the Excel template "UEQ_Data_Analysis," a specific tool developed by the UEQ team to facilitate score calculation and result visualization. Information about the questionnaire and the application of this tool is available for free and can be accessed at www.ueq-online.org.

3. RESULTS AND DISCUSSION

3.1. Confidence Interval for Items and Scales

In this section, a 5% confidence interval is displayed for the scale average and the average of each item. The confidence interval serves as a measure of precision in estimating the scale average. The smaller the confidence interval, the higher the estimation precision, and the more reliable the obtained results. The width of the confidence interval is influenced by the amount of available data as well as the level of consistency in the respondents' evaluations of the product being assessed. The more consistent their opinions, the narrower the confidence interval.

Table 1. Respondent confidence interval.

Confidence intervals (p=0.05) per scale						
Scale	**Mean**	**Std. Dev.**	**N**	**Confidence**	**Confidence interval**	
Attractiveness	2,392	0,493	37	0,159	2,233	2,551
Perspicuity	2,209	0,588	37	0,189	2,020	2,399
Efficiency	2,257	0,522	37	0,168	2,089	2,425
Dependability	2,155	0,544	37	0,175	1,980	2,331
Stimulation	2,291	0,570	37	0,184	2,107	2,474
Novelty	1,784	0,947	37	0,305	1,479	2,089

From Table 1, the Attractiveness and Efficiency scales show more stable and reliable results with narrow confidence intervals, while Novelty has greater variation in user perception, indicating a higher level of uncertainty regarding the product's novelty impression. Overall, this product is rated quite well in terms of attractiveness, efficiency, and stimulation, but it requires more attention to the aspects of novelty and reliability.

3.2. Benchmark

The benchmark is derived from the evaluation of hundreds of high-quality, mature technology products. These studies encompassed a wide range of well-designed systems, including mobile applications, web systems, and development tools. The benchmark used in this case study refers to the "Benchmark Intervals for Web Sites and Web Services". This benchmark is compiled based on data from 85 product evaluations.

Table 2. Benchmark intervals for web sites and web services

Category	**Attractiveness**	**Perspicuity**	**Efficiency**	**Dependability**	**Stimulation**	**Originality**
Excellent	1.75	2.07	1.70	1.70	1.56	1.12

 | doi: 10.23960/pepadun.v6i3.274

Category	Attractiveness	Perspicuity	Efficiency	Dependability	Stimulation	Originality
Good	1.41	1.84	1.43	1.53	1.10	0.87
Above average	0.96	1.14	0.98	1.19	0.69	0.49
Below average	0.44	0.65	0.50	0.81	0.07	-0.22

Each value in Table 2 represents the minimum score a product must achieve to fall into a specific category. For instance, in the 'Perspicuity' dimension, a score above 1.85 is considered 'Excellent,' a score between 1.48 and 1.85 is 'Good,' and a score below 0.58 is rated as 'Bad' [21]. Table 3 and Figure 3 present the results of the User Experience Questionnaire (UEQ) analysis, which illustrate the quality of the user experience on the Mount Kerinci hiking e-ticketing website prototype. The detailed explanation of each scale and its interpretation is availabale in Table 3.

Table 3. UEQ benchmark results.

Scale	Mean	Comparisson to benchmark	Interpretation
Attractiveness	2,39	Excellent	In the range of the 10% best results
Perspicuity	2,21	Excellent	In the range of the 10% best results
Efficiency	2,26	Excellent	In the range of the 10% best results
Dependability	2,16	Excellent	In the range of the 10% best results
Stimulation	2,29	Excellent	In the range of the 10% best results
Novelty	1,78	Excellent	In the range of the 10% best results

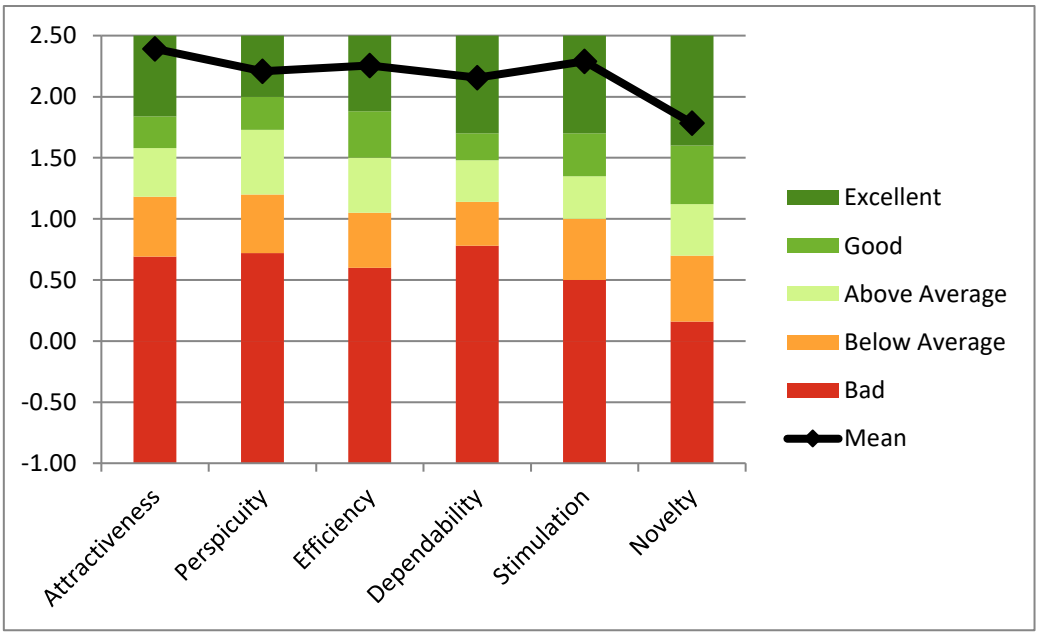

Figure 3. UEQ benchmark results chart.

The results indicate that all the scales tested, namely Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty, fall into the excellent category and are within the top 10% of the best results. Attractiveness, with an average of 2.39 creates a positive and pleasant impression contributing to stimulation with an average of 2.29 encouraging users to continue using the product. Efficiency, with an average of 2.26

© 2025 The Authors | doi: 10.23960/pepadun.v6i3.274

makes it easier for users to complete tasks quickly, supporting Dependability, with an average of 2.16 which reflects the product's reliability and consistency. Perspicuity, with an average of 2.21, ensures the product is easy to understand, enhancing usage efficiency and allowing users to adapt quickly. Although Novelty (users' impression that product design is innovative, creative, and catches users' attention) got an average of 1.78, indicating limited innovation, it is still in an excellent range[12]. However, enhancing novelty elements like creativity/inventiveness, leading edge, and innovation can enrich attractiveness and stimulation, increasing user appeal and excitement. Overall, the results from the other scales indicate a very positive user experience.

3.3. Improvement Recommendations

Design improvement recommendations are provided after obtaining evaluation results using the UEQ method. Input suggestions from respondents during the testing serve as the basis for these improvements, focusing on enhancing ease of use, more intuitive navigation, and refining design elements.

a. Improvement of the Log-out Button Design

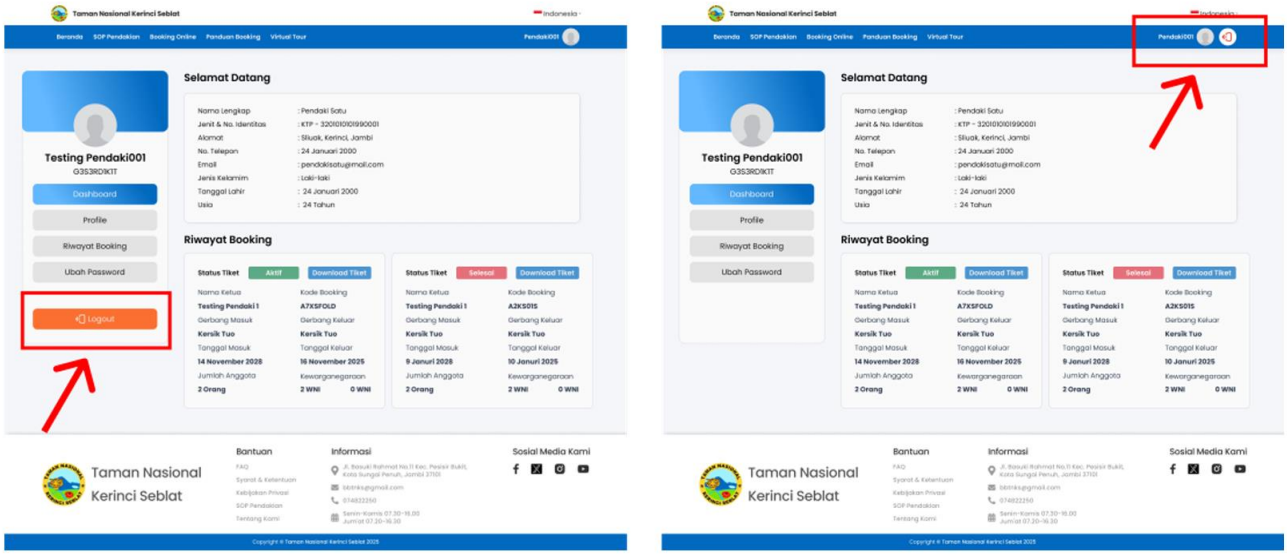

Figure 4. Log-out button design.

Based on the test results, some respondents suggested that the logout button should be more easily accessible. As given in Figure 4, previously, this button was only available on the dashboard, making it less practical when users were on other pages. Therefore, the design was improved by moving the logout button to the navigation bar so that it could be accessed from all pages. This change enhances user comfort, efficiency, and ease in logging out of their account at any time.

b. Improvement of the Checkbox Design for Terms and Conditions Approval

As shown in Figure 5, the design change in the left image (before) and the right image (after) lies in the size of the checkbox for the approval statement. Previously, the checkbox was small and therefore less visible, especially for users with visual impairments or small devices. In the new design, the size of the checkbox has been increased to make it more visible and accessible, thereby improving accessibility, comfort, and reducing the risk of users missing an important approval step before proceeding with the process.

 | doi: 10.23960/pepadun.v6i3.274

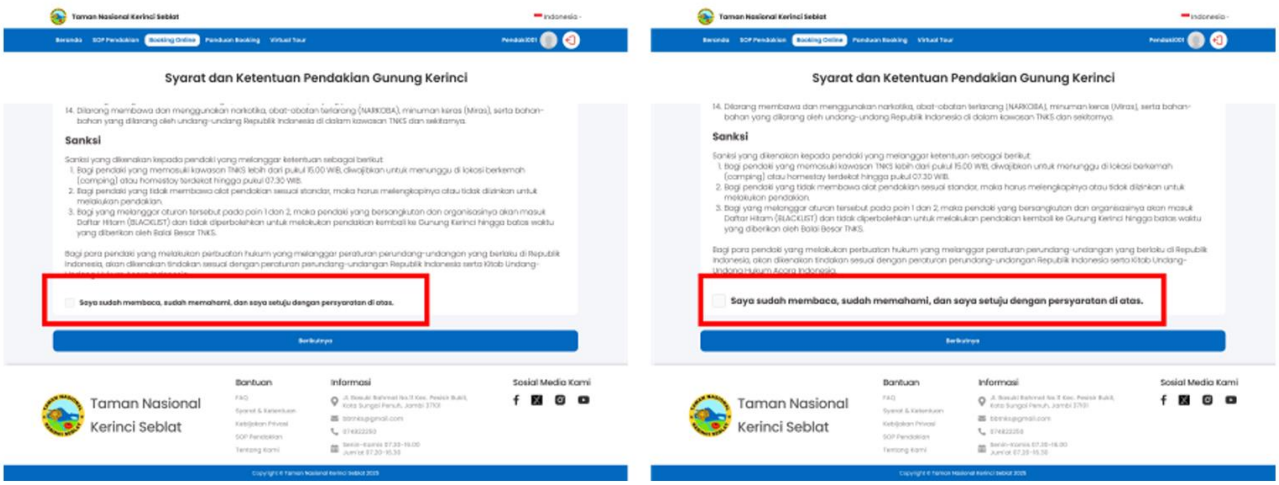

Figure 5. Checkbox design for terms and conditions approval.

c. Improvement of Account Profile Photo Edit Design

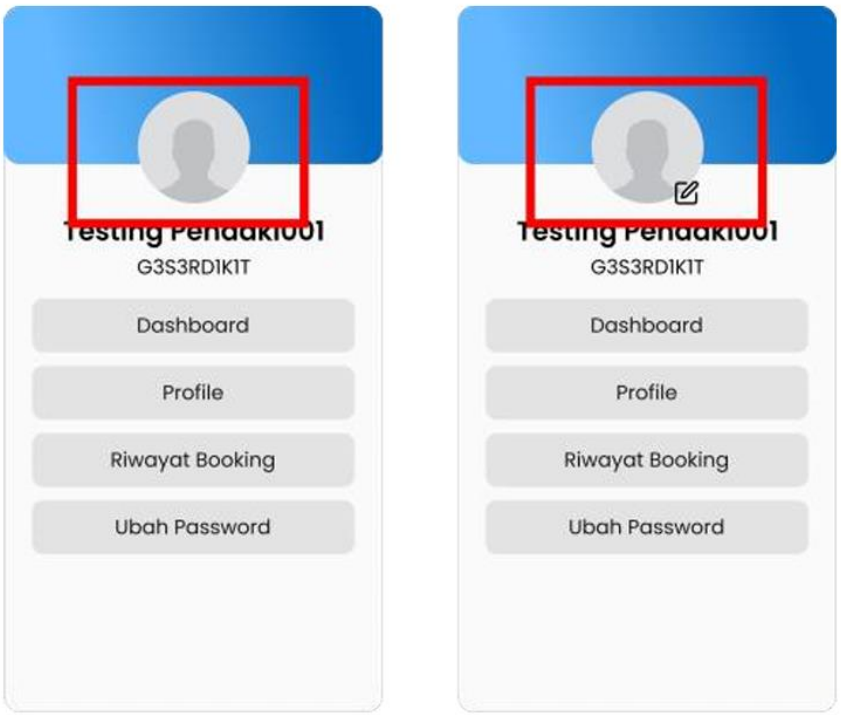

Figure 6. Account profile photo edit design.

The design change in Figure 6 involves the addition of an edit icon in the bottom right corner of the profile picture. Previously, the profile photo only appeared as an avatar without any indication for changing it, making it difficult for some respondents to find the option to change the photo. With the addition of the edit icon, users now have a clear indication that the profile photo can be changed directly, thereby increasing ease of use, accessibility, and reducing confusion.

 | doi: 10.23960/pepadun.v6i3.274

4. CONCLUSIONS

The interface design of the E-Ticket application for Mount Kerinci Hiking, which has been tested using the User Experience Questionnaire method through the Maze tool, shows a very positive user experience, with all main dimensions falling into the excellent category. High attractiveness creates a pleasant impression, supported by stimulation that encourages users to continue interacting. The aspects of Efficiency and Dependability prove that this application is efficient, reliable, and facilitates consistent task completion, while Perspicuity ensures ease of understanding and use. Although the Novelty aspect still shows room for improvement in terms of innovation, the development of these novel elements can enrich user appeal and excitement. Overall, this application has demonstrated excellent performance in almost all dimensions, with Novelty as a potential area for further development.

LITERATURE

[1] D. N. Pratama and A. Pramudwiatmoko, "Implementation of a Mobile Based Mount Kerinci Climbing E-Ticket Booking System to Optimize Route Quota Management," *JTOS*, vol. 7, no. 2, pp. 93–102, Dec. 2024, doi: 10.36378/jtos.v7i2.3829.

[2] M. Fajri, D. Z. Daneswara, A. S. Saragih, S. R. Tamba, M. G. Sihombing, A. Kuncorojati, J. A. Sugito, D. B. D. Salim, and L. F. Lishobrina, "Penerapan Design Thinking Pada Industri Pariwisata Di Purwokerto Berbasis Aplikasi Studi Kasus Di Kabupaten Banyumas," *Prosiding SENDIKO*, vol. 3, 2024.

[3] S. A. Saputera, D. Sunardi, A. Syafrizal, and P. Samsidi, "Evaluasi Sistem Informasi Akademik Menggunakan Metode MccalL," *JTIS*, vol. 3, no. 2, pp. 9–16, Oct. 2020, doi: 10.36085/jtis.v3i2.878.

[4] M. F. Putri and M. Razi A, "The Benefits of Gamification on User Experience: A Systematic Literature Review," *Jurnal Sains dan Teknologi (JSIT)*, vol. 2, no. 2, pp. 117–125, Aug. 2023, doi: 10.47233/jsit.v2i3.353.

[5] K.-L. Huang, H. Lin, and C.-C. Lu, "An Evaluation of User Experience of Web Main Menu on Different Mobile Devices," in *Human Aspects of IT for the Aged Population. Acceptance, Communication and Participation: 4th International Conference, ITAP 2018, Held as Part of HCI International 2018, Las Vegas, NV, USA, July 15–20, 2018, Proceedings, Part I*, Berlin, Heidelberg: Springer-Verlag, 2018, pp. 235–251. doi: 10.1007/978-3-319-92034-4_18.

[6] *Ergonomics of Human-System Interaction - Part 210: Human-Centred Design for Interactive Systems*. Accessed: June 21, 2025. [Online]. Available: https://www.iso.org/standard/77520.html

[7] M. S. Abdillah, F. A. M. Dafa, and I. S. Widiati, "Penerapan Metode Design Thinking pada UI/UX Website SaveBite untuk Penjualan Sisa Makanan dalam Mengurangi Food waste," *Router*, vol. 2, no. 3, pp. 185–196, Aug. 2024, doi: 10.62951/router.v2i3.168.

[8] N. L. D. Gitajayanti, I. P. Satwika, and A. A. I. I. Paramitha, "Evaluasi Sistem Informasi Skripsi dan Tugas Akhir STMIK Primakara (PRISKA) Menggunakan Metode Usability Testing," *KARMAPATI*, vol. 10, no. 1, p. 59, Mar. 2021, doi: 10.23887/karmapati.v10i1.31770.

[9] G. N. Aprilia and M. N. Dasaprawira, "Perancangan UI/UX Aplikasi E-Rapor pada TPQ Berbasis Android menggunakan Metode User Centered Design (UCD)," *INDEXIA*, vol. 5, no. 01, p. 48, May 2023, doi: 10.30587/indexia.v5i01.5496.

[10] M. Schrepp, A. Hinderks, and J. Thomaschewski, "Applying the User Experience Questionnaire (UEQ) in Different Evaluation Scenarios," in *Design, User Experience, and Usability. Theories, Methods, and Tools for Designing the User Experience*, vol. 8517, A. Marcus, Ed., in Lecture Notes in Computer Science, vol. 8517. , Cham: Springer International Publishing, 2014, pp. 383–392. doi: 10.1007/978-3-319-07668-3_37.

[11] R. H. P. Kusumo, "Evaluasi User Experience Sistem Informasi Manajemen Tugas Akhir (SEKAWAN) Informatika Universitas Islam Indonesia Menggunakan Metode User Experience Questionnaire (UEQ)," *AUTOMATA*, vol. 4, no. 1, 2023.

[12] M. A. Kushendriawan, H. B. Santoso, P. O. H. Putra, and M. Schrepp, "Evaluating User Experience of a Mobile Health Application 'Halodoc' using User Experience Questionnaire and Usability Testing," *J. Sistem Inf. (J. Inf. Sys.)*, vol. 17, no. 1, pp. 58–71, Apr. 2021, doi: 10.21609/jsi.v17i1.1063.

[13] M. S. Rahman, "Aplikasi Rekapitulasi Kuesioner Hasil Proses Belajar Mengajar Pada STMIK Indonesia Banjarmasin Menggunakan Java," *Technologia*, vol. 10, no. 3, p. 165, July 2019, doi: 10.31602/tji.v10i3.2231.

[14] Y. Wijayanti, S. Suyoto, and A. T. Hidayat, "Evaluasi Pengalaman Pengguna Pada Aplikasi Seluler Visiting Jogja Menggunakan Metode User Experience Questionnaire (UEQ)," *J. Janitra Inform. Sis. Inf.*, vol. 3, no. 1, pp. 10–17, Apr. 2023, doi: 10.25008/janitra.v3i1.169.

[15] F. Olivia and A. Ibrahim, "Evaluating User Experience and Usability of the USEPT Website Using User Experience Questionnaire and System Usability Scale Method," *journalisi*, vol. 6, no. 4, pp. 2632–2648, Dec. 2024, doi: 10.51519/journalisi.v6i4.910.

[16] A. B. Kurniawan, I. Aknuranda, and A. R. Perdanakusuma, "Evaluasi Dan Perbaikan Pengalaman Pengguna Menggunakan User Experience Questionnaire (UEQ) Dan Heuristic Evaluation (HE) Pada Aplikasi Mobile Info BMKG".

[17] J. W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications, 2014. [Online]. Available: https://books.google.co.id/books?id=4uB76IC_pOQC

[18] A. B. Kurniawan, I. Aknuranda, and A. R. Perdanakusuma, "Evaluasi dan Perbaikan Pengalaman Pengguna Menggunakan User Experience Questionnaire (UEQ) dan Heuristic Evaluation (HE) Pada Aplikasi Mobile Info BMKG", *JPTIIK*, vol. 3, no. 5, 2019.

[19] M. Schrepp, A. Hinderks, and J. Thomaschewski, "Design and Evaluation of a Short Version of the User Experience Questionnaire (UEQ-S)," *IJIMAI*, vol. 4, no. 6, p. 103, 2017, doi: 10.9781/ijimai.2017.09.001.

[20] D. Firmansyah and Dede, "Teknik Pengambilan Sampel Umum dalam Metodologi Penelitian: Literature Review," *JIPH*, vol. 1, no. 2, pp. 85–114, Aug. 2022, doi: 10.55927/jiph.v1i2.937.

[21] M. Schrepp, "User Experience Questionnaire Handbook." Unpublished, 2015. doi: 10.13140/RG.2.1.2815.0245.

[22] M. Ishtiaq, "Book Review Creswell, J. W. (2014). Research Design: Qualitative, Quantitative and Mixed Methods Approaches (4th ed.). Thousand Oaks, CA: Sage," *ELT*, vol. 12, no. 5, p. 40, Apr. 2019, doi: 10.5539/elt.v12n5p40.

 | doi: 10.23960/pepadun.v6i3.274

[23] A. Widiastono and L. Angriani, "Analisis dan Evaluasi Sistem Informasi Geografis Pariwisata Propinsi Papua," *Ilk. J. Ilm.*, vol. 10, no. 1, pp. 33–37, Apr. 2018, doi: 10.33096/ilkom.v10i1.199.33-37.

[24] M. F. Putri, R. Juita, A. N. Nidayanto, and D. I. Inan, "Gamification on Mobile Payment Application: Uses and Gratification Perspective," *Asia Pacific Journal of Information Systems*, vol. 32, no. 4, pp. 750–769, Dec. 2022, doi: 10.14329/apjis.2022.32.4.750.

[25] M. Schrepp, "User Experience Questionnaire Handbook," 2015, *Unpublished*. doi: 10.13140/RG.2.1.2815.0245.